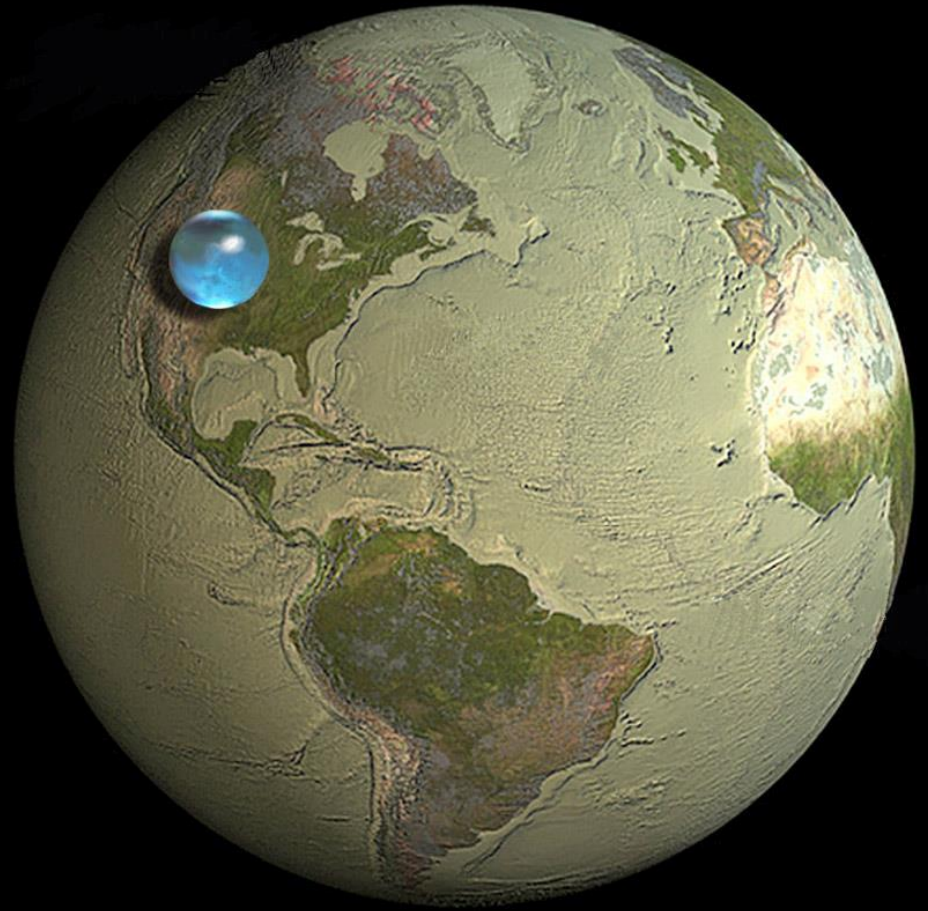


A Water Ethic: Building on Leopold's Legacy


Mississippi River Forum
May 19, 2012



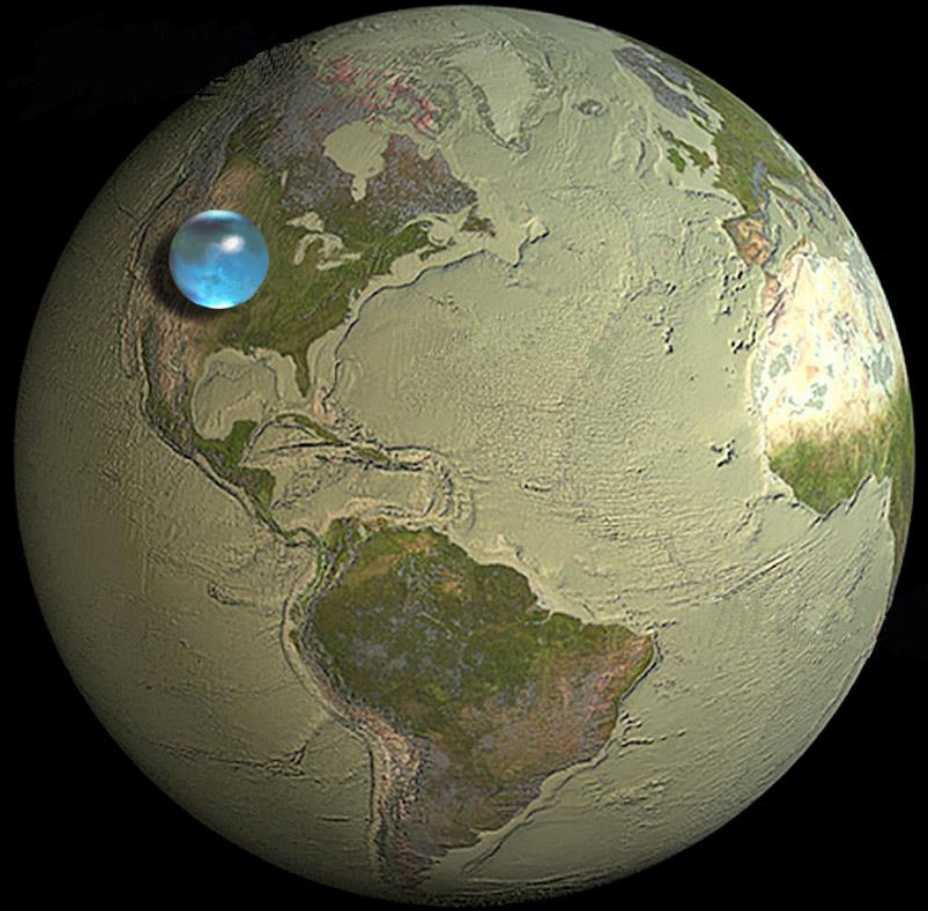
Summer forecast sparks concern

Soaring temps may cause wildfires, water shortages

USA Today, 19 May 2012



Water is fundamental to the Goshutes' beliefs, and they fear losing to Las Vegas' thirst the sacred waters, around which their ceremonies revolve, that tumble down 11 streams from the Deep Creek mountain range. In the Goshute language, Steele says, water is referred to as a human being, a living entity. It is in the water that the spirits of their ancestors reside. If the water goes to Las Vegas' fountains and man-made Venetian canals, the spirits will go there, too.



“Do unto those downstream as you would have those upstream do unto you.”

Wendell Berry



“ . . . the watershed is the first and last nation, whose boundaries, though subtly shifting, are unarguable . . . and the life that comes to flourish within it constitutes the first kind of community .
...We can enjoy our humanity... and take ourselves as no more and no less than another being in *the Big Watershed*.”

Gary Snyder, “The Practice of the Wild”

Lakes in Relation to Terrestrial Life Patterns

ALDO LEOPOLD

*Professor of Wildlife Management
University of Wisconsin*

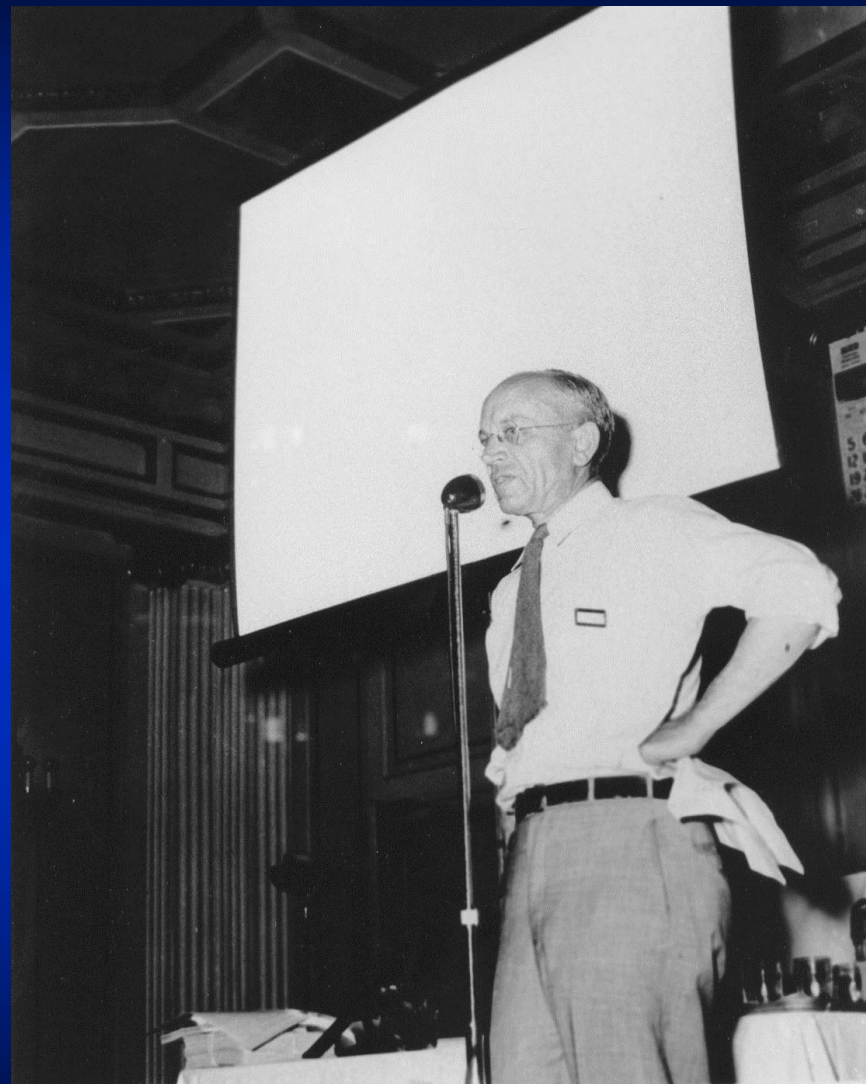
MECHANIZED MAN, having rebuilt the landscape, is now rebuilding the waters. The sober citizen who would never submit his watch or his motor to amateur tamperings freely submits his lakes to drainings, fillings, dredgings, pollutions, stabilizations, mosquito control, algae control, swimmer's itch control, and the planting of any fish able to swim. So also with rivers. We constrict them with levees and dams, and then flush them with dredgings, channelizations, and the floods and silt of bad farming.


The willingness of the public to accept and pay for these contradictory tamperings with the natural order arises, I think, from at least three fallacies in thought. First, each of these tamperings is regarded as a separate project because it is carried out by a separate bureau or profession, and as expertly executed because its proponents are trained, each in his own narrow field. The public does not know that bureaus and professions may cancel one another, and that expertness may cancel understanding. Second, any constructed mechanism is assumed to be superior to a natural one. Steel and concrete have wrought much good, therefore anything built with them must be good. Third, we perceive organic behavior only in those organisms which we have built. We know that engines and governments are organisms; that tampering with a part may affect the whole. We do not yet know that this is true of soils and water.

Thus men too wise to tolerate hasty tinkering with our political constitution accept without a qualm the most radical amendments to our biotic constitution.

FOOD CIRCUITS IN SOIL AND WATER

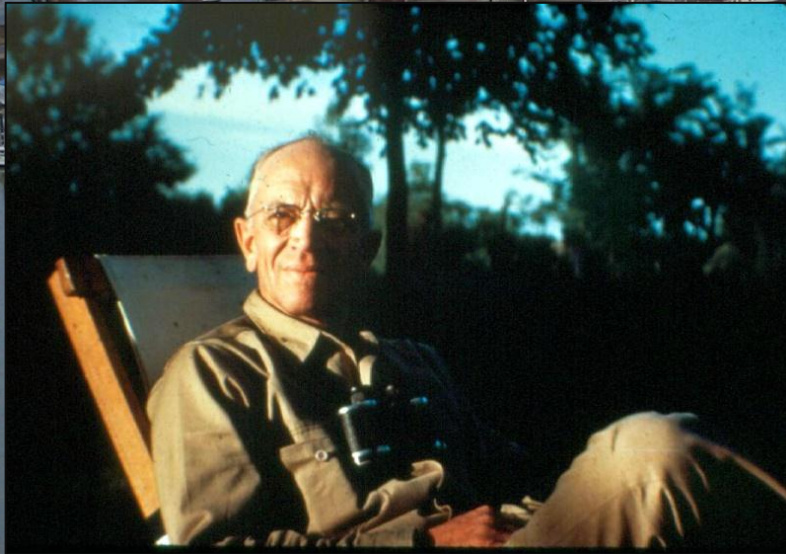
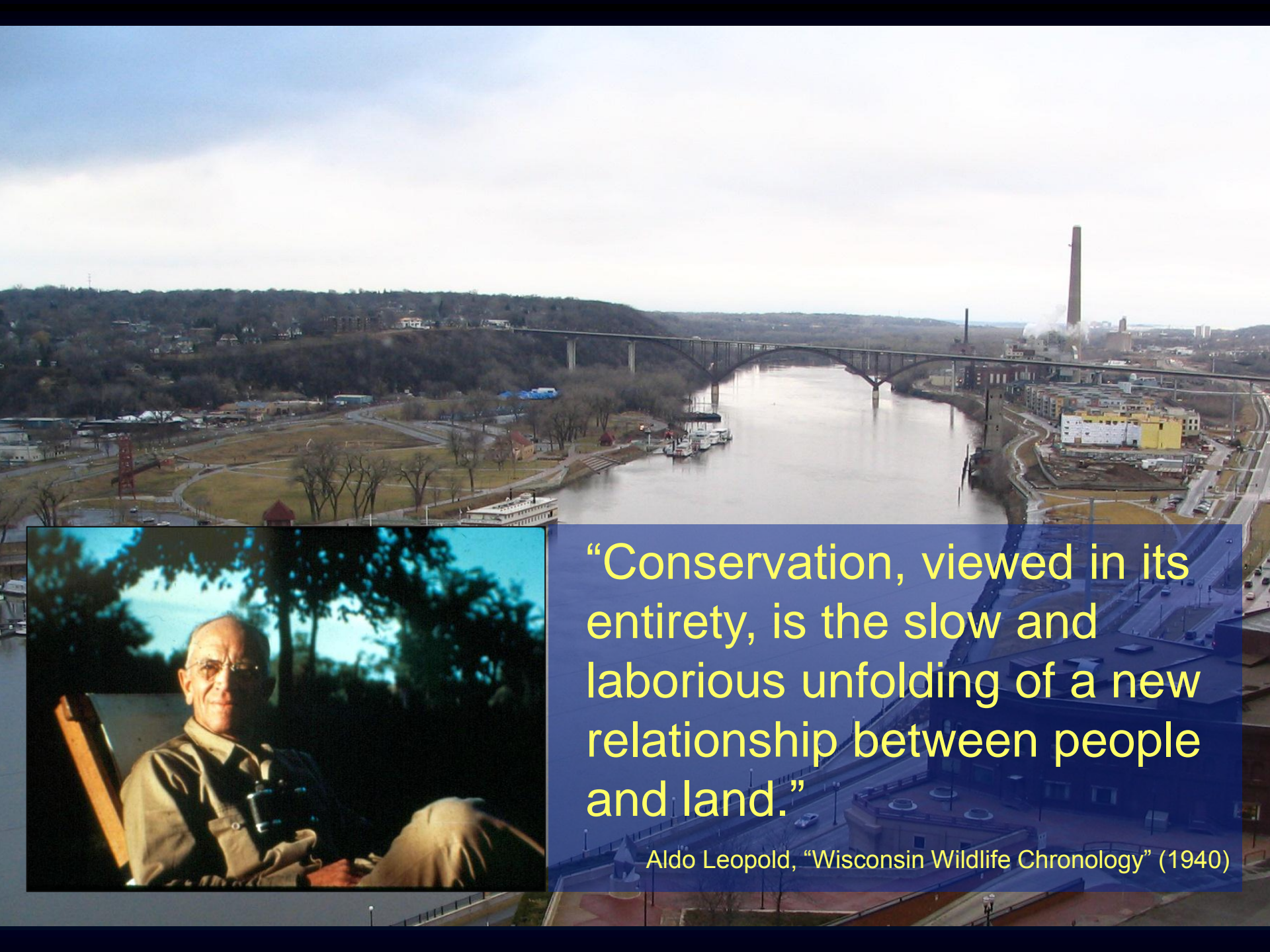
Soil and water are not two organic systems, but one. Both are organs of a single landscape; a derangement in either affects the health of both. We acknowledge this interaction between water and land after erosion or pollution makes them sick, but we lack a "language" for describing



A composite image of the Earth, showing the continents of North and South America. A small, translucent blue globe is positioned on top of the North American continent, symbolizing the relationship between the land and the water it represents. The background is a dark, solid color.

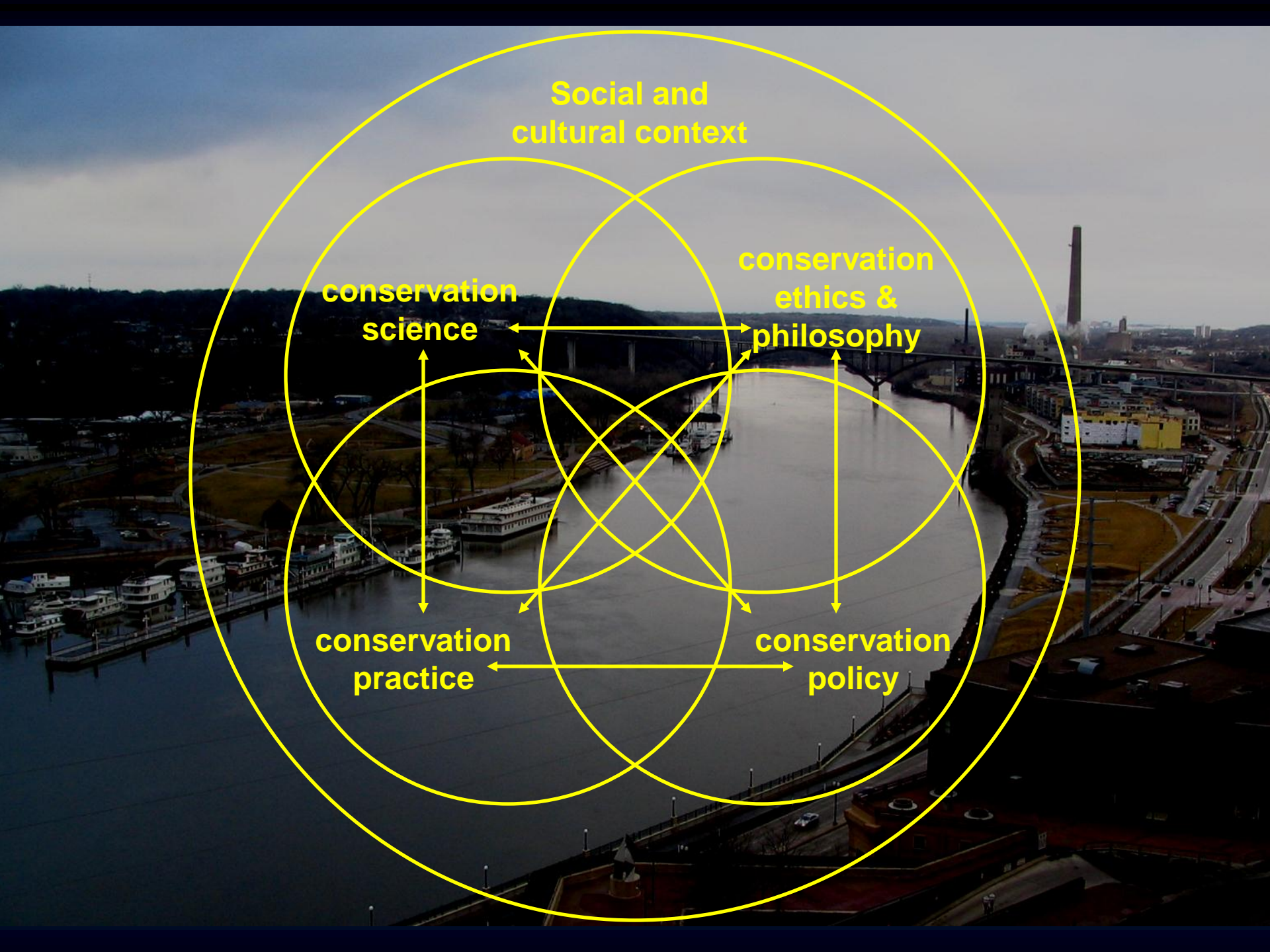
“Mechanized man, having rebuilt the landscape, is now rebuilding the waters. The sober citizen who would never submit his watch or his motor to amateur tamperings freely submits his lakes to drainings, fillings, dredgings, pollutions, stabilizations, mosquito control, algae control, swimmer’s itch control, and the planting of any fish able to swim. So also with rivers. We constrict them with levees and dams, and then flush them with dredgings, channelizations, and the floods and silt of bad farming. ...Thus men too wise to tolerate hasty tinkering with our political constitution accept without a qualm the most radical amendments to our biotic constitution.”

Aldo Leopold, “Lakes in Relation to Terrestrial Life Patterns” (1941)



“Conservation, viewed in its entirety, is the slow and laborious unfolding of a new relationship between people and land.”

Aldo Leopold, “Wisconsin Wildlife Chronology” (1940)



**Social and
cultural context**

**conservation
science**

**conservation
ethics &
philosophy**

**conservation
practice**

**conservation
policy**







Aldo Leopold

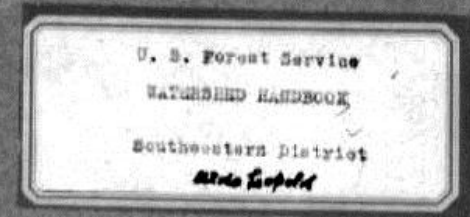
1 K 6 1917

Paper for American Fisheries Society,
47th Annual Meeting, St. Paul, 8/29/17.

MIXING TROUT IN WESTERN WATERS

Aldo Leopold, U. S. Forest Service,
Albuquerque, New Mexico.

If a trout stream is stocked with 10,000 natives,
10,000 eastern brook, and 10,000 rainbow, and granting that
the conditions are suited to each, will that stream produce
more or less pounds of trout per year than if stocked with



U. S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Erosion eats into our hills like a contagion, and floods bring down the loosened soil upon our valleys like a scourge. Water, soil, animals, and plants—the very fabric of prosperity—react to destroy each other and us. Science can and must unravel those reactions, and government must enforce the findings of science.

Aldo Leopold, "Some Fundamentals of Conservation in the Southwest" (1923)

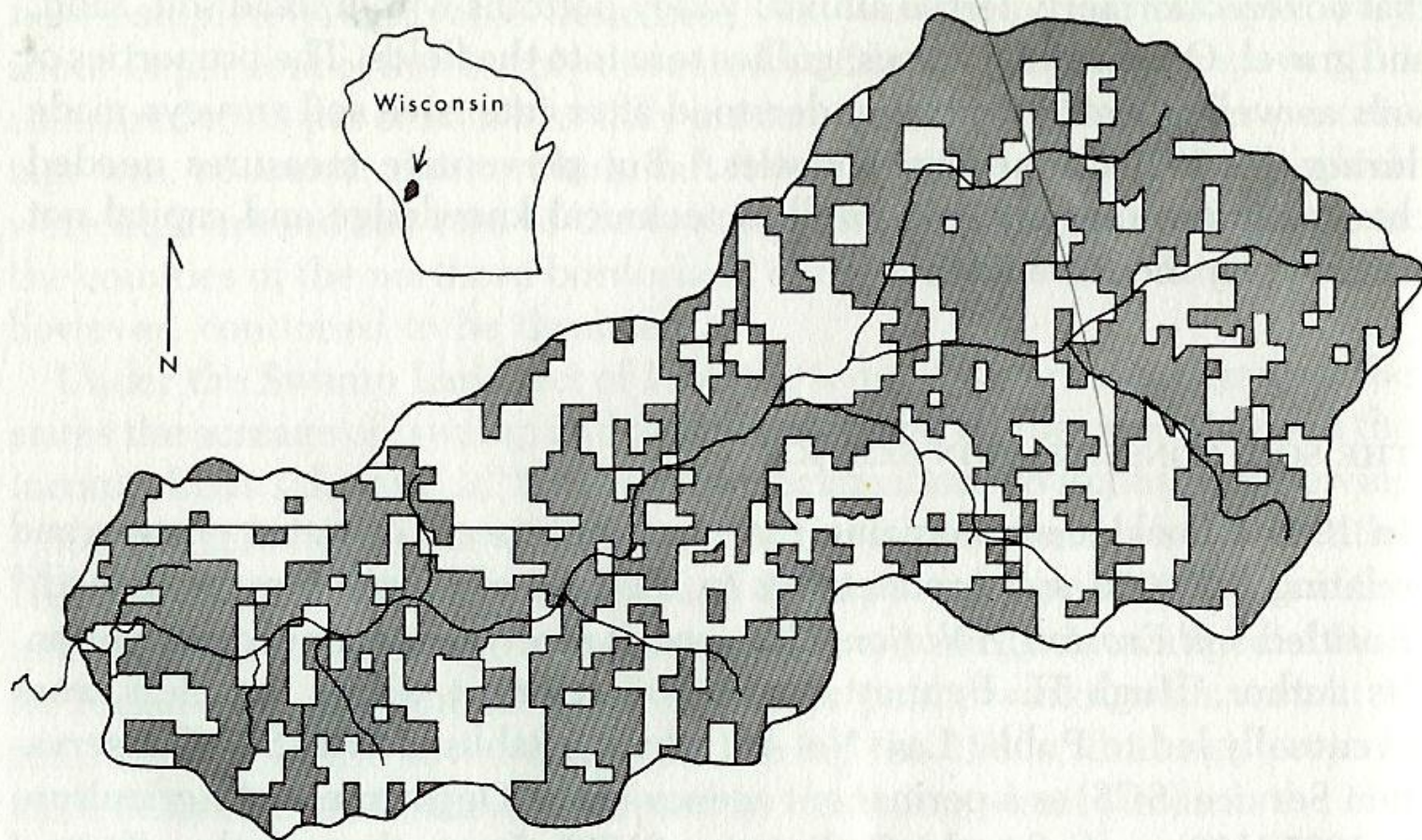


Figure 8-1. The Coon Valley Erosion Control Demonstration Project, Wisconsin. Cooperating farms (dark-shaded areas) practice conservation. All tracts show rectangular borders.



NATION'S FIRST WATERSHED PROJECT

This point is near the center of the 90,000 acre Coon Creek Watershed, the nation's first large-scale demonstration of soil and water conservation. The area was selected for this purpose by the U. S. Soil Conservation Service (then Soil Erosion Service) in October 1933. Technicians of the S.C.S. and the University of Wisconsin pooled their knowledge with experiences of local farm leaders to establish a pattern of land use now prevalent throughout the midwest. Planned practices in effect include improvement of woodlands, wildlife habitat and pastures, better rotations and fertilization, strip cropping, terracing, and gully and stream bank erosion control. The outcome is a tribute to the wisdom, courage and foresight of the farm families who adopted the modern methods of conservation farming illustrated here.

Erected 1955





COON VALLEY

AN ADVENTURE IN COOPERATIVE CONSERVATION

By ALDO LEOPOLD

(Photographs by courtesy of the Soil Erosion Service)

THERE are two ways to apply conservation to land. One is to superimpose some particular practice upon the pre-existing system of land-use, without regard to how it fits or what it does to or for other interests involved.

The other is to reorganize and gear up the farming, forestry, game cropping, erosion control, scenery, or whatever values may be involved so that they collectively comprise a harmonious balanced system of land-use.

Each of our conservation factions has heretofore been so glad to get any action at all on its own special interest that it has been anything but solicitous about what happened to the others. This kind of progress is probably better than none, but it savors too much of the planless exploitation it is intended to supersede.

Lack of mutual cooperation among conservation groups is reflected in laws and appropriations. Whoever gets there first writes the legislative ticket to his own particular destination. We have somehow forgotten that all this unorganized avalanche of laws and dollars must be put in order before it can permanently benefit the land, and that this onerous job, which is evidently too difficult for legislators and propagandists, is being wished upon the farmer and upon the administrator

of public properties. The farmer is still trying to make out what it is that the many-voiced public wants him to do. The administrator, who is seldom trained in more than one of the dozen special fields of skill comprising conservation, is growing gray trying to shoulder his new and incredibly varied burdens. The stage, in short, is all set for somebody

to show that each of the various public interests in land is better off when all cooperate than when all compete with each other. This principle of integration of land uses has been already carried out to some extent on public properties like the National Forests. But only a fraction of the land, and the poorest fraction at that, is or can ever become public property. The crux of the land problem is to show that integrated use is possible on



Coon Valley is one of the thousand farm communities which, through the abuse of its originally rich soil, has created the Mississippi flood problem, the navigation problem, the overproduction problem, and the problem of its own future continuity.

private farms, and that such integration is mutually advantageous to both the owner and the public.

Such was the intellectual scenery when in 1933 there appeared upon the stage of public affairs a new federal bureau, the United States Soil Erosion Service. Erosion-control is one of those new professions whose personnel has been recruited by the fortuitous interplay of events. Previous to 1933 its work had been to define and propagate an idea,

THE CONSERVATION ETHIC¹

By ALDO LEOPOLD

University of Wisconsin

The gradual extension of ethical criteria to economic relationships is an historical fact. Economic criteria did not suffice to adjust men to society; they do not now suffice to adjust society to its environment. If our present evolutionary impetus is an upward one, it is ecologically probable that ethics will eventually be extended to land. The present conservation movement may constitute the beginnings of such an extension. If and when it takes place, it may radically modify what now appear as insuperable economic obstacles to better land-use.

WHEN god-like Odysseus returned from the wars in Troy, he hanged all on one rope some dozen slave-girls of his household whom he suspected of misbehavior in his absence.

This hanging involved propriety, much less girls were property. property was then, as expediency, not of right

of social from anti-social conduct. These are two definitions of one thing. The thing has its origin in the tendency of interdependent individuals or societies to

Reprinted from JOURNAL OF FORESTRY
Vol. XXXVII, No. 9, September, 1939

WEDNESDAY MORNING SESSION, JUNE 21, 1939

JOINT MEETING WITH THE ECOLOGICAL SOCIETY OF AMERICA

SUBJECT: SYMPOSIUM ON LAND USE

Chairman: L. R. Schenckmann

A BIOTIC VIEW OF LAND

By ALDO LEOPOLD

University of Wisconsin

IN pioneering times wild plants and animals were tolerated, ignored, or fought, the attitude depending on the utility of the species. Conservation introduced the idea that the useful wild species could be managed as but the less useful ones were ignored and

In short, economic biology assumed that the biotic function and economic utility of a species was partly known and the rest could slowly be

From:

J. T. Curtis
DEPT. OF WILDLIFE MGMT.
University of Wisconsin, Madison

THE ECOLOGICAL CONSCIENCE

DR. ALDO LEOPOLD

University of Wisconsin

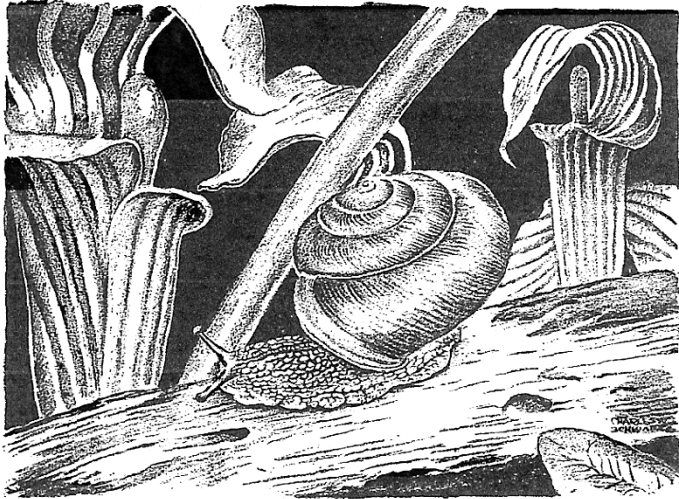
Department of Wildlife Management

Address at Conservation Meeting, Minneapolis, June 1947

Everyone ought to be dissatisfied with the slow spread of conservation to the land. Our "progress" still consists largely of letterhead pieties and convention oratory. The only progress that counts is that on the actual landscape of the back forty, and here we are still slipping two steps backward for each forward stride.

THE LAND ETHIC

raw wilderness gives definition and meaning to the human enterprise.



The Land Ethic

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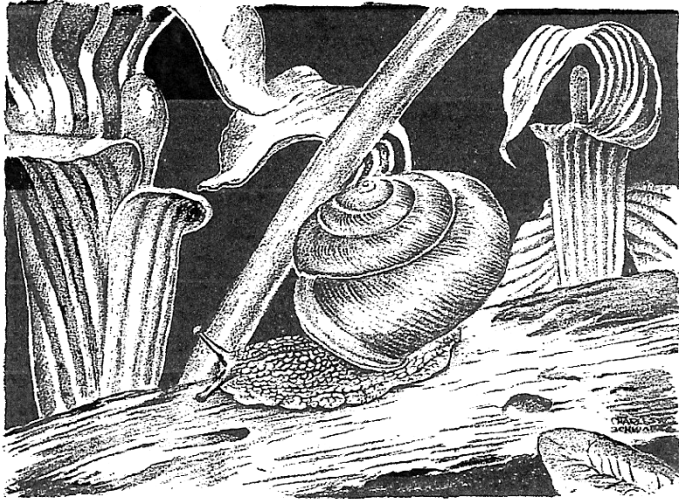
This hanging involved no question of propriety. The girls were property. The disposal of property was then, as now, a matter of expediency, not of right and wrong.

Concepts of right and wrong were not lacking from Odysseus' Greece: witness the fidelity of his wife through the

“The land ethic simply enlarges the boundaries of the community to include soils, *waters*, plants, and animals, or collectively: the land.”

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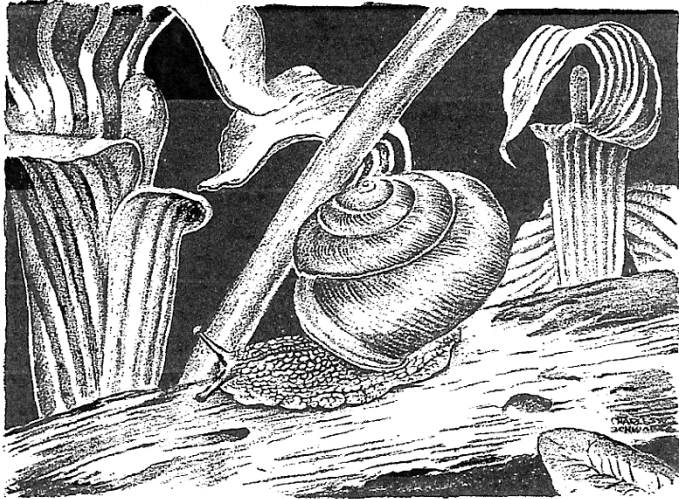
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“The extension of ethics to [the land] is, if I read the evidence correctly, an evolutionary possibility and an ecological necessity.”

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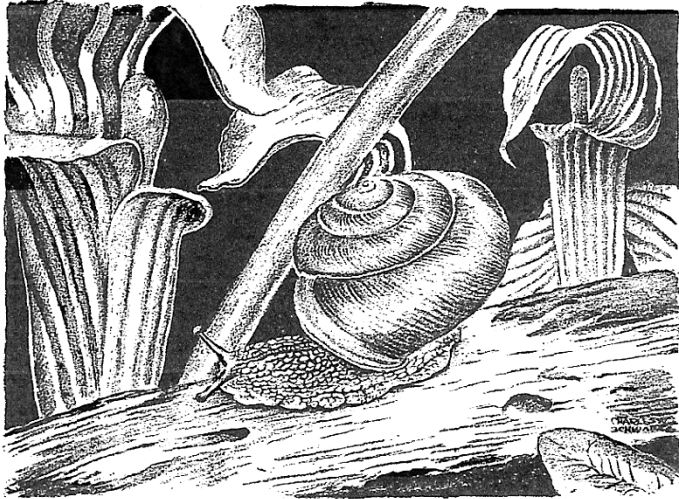
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“Conservation is a state of health in the land. The land consists of soil, *water*, plants, and animals, but health is more than a sufficiency of these components. It is a state of vigorous self-renewal in each of them, and in all collectively.”

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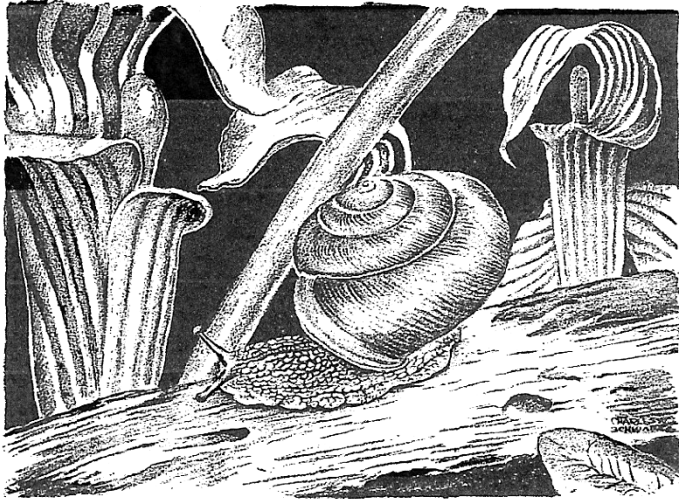
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“We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.”

THE LAND ETHIC

raw wilderness gives definition and meaning to the human enterprise.



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"I have purposely presented the land ethic as a product of social evolution because nothing so important as an ethic is ever "written." ...It evolve[s] in the minds of a thinking community...."

BLUE REVOLUTION UNMAKING AMERICA'S WATER CRISIS



CYNTHIA BARNETT

"Safina's Song is the Silent Spring of our time."
—Richard Ellis, *Los Angeles Times* Book Review

song for the blue ocean



CARL SAFINA

WATER ETHICS

Foundational Readings for Students and Professionals



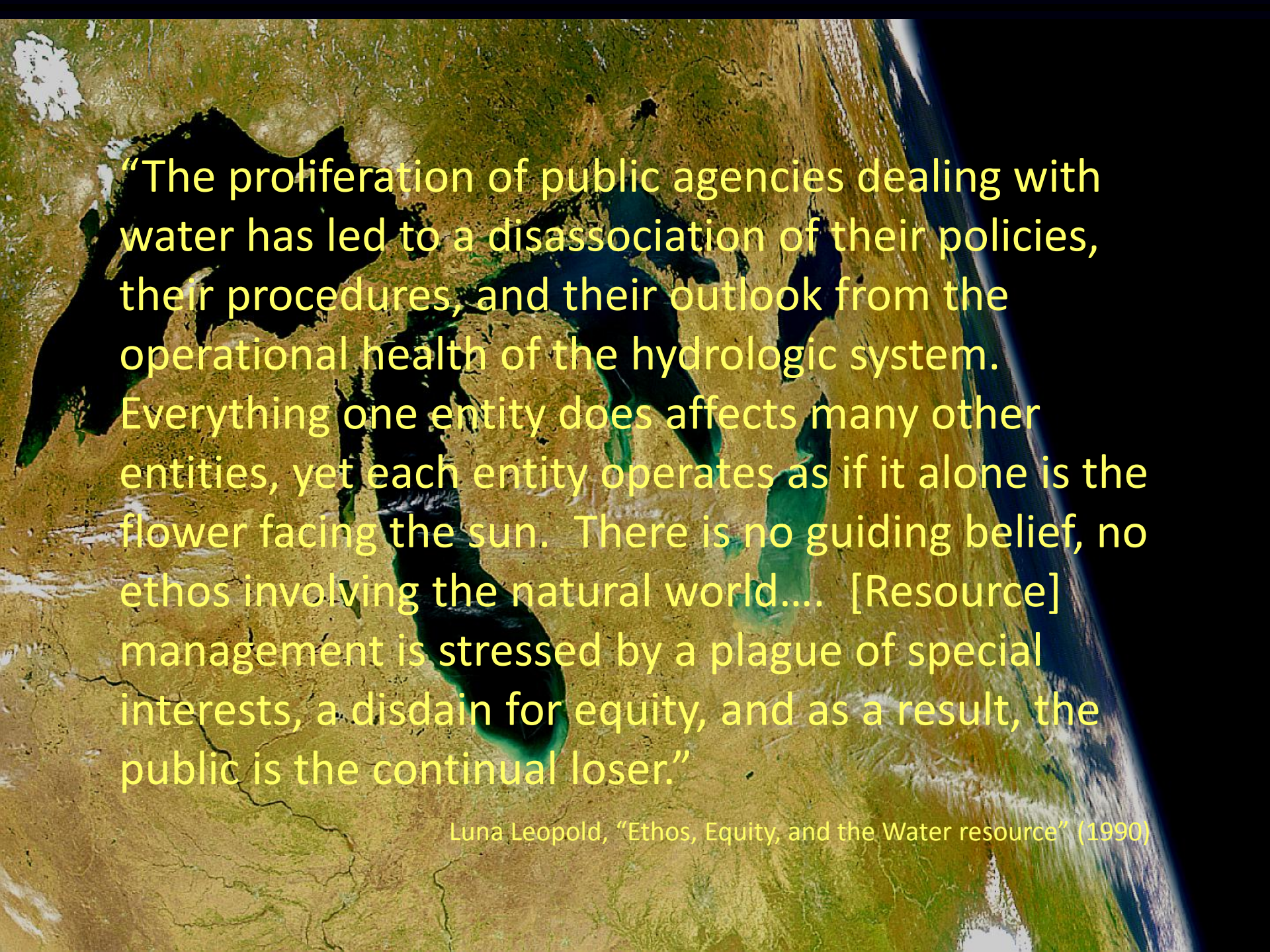
Edited by
Peter G. Brown and Jeremy J. Schmidt

A satellite map of the United States is shown in the background. The land is depicted in shades of brown and tan, while the water bodies are dark blue. The Great Lakes and the Mississippi River are clearly visible. The text is overlaid on the map in a yellow, sans-serif font.

“Of course we need wise legislation at the local, state, and national level to protect our rivers, along with the rest of our common wealth. But what we need even more is a change in the mindset....

The only sure protection is a citizenry that clearly recognizes and fiercely defends the common wealth as the prime source of our wellbeing, and as our legacy to future generations.”

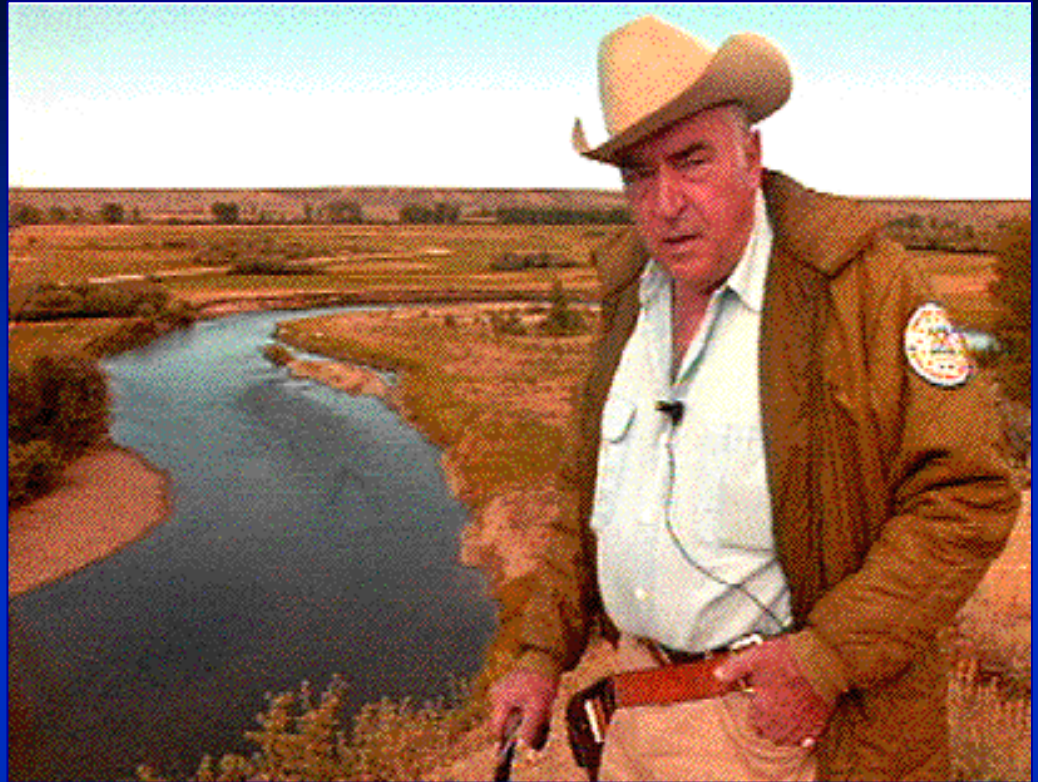
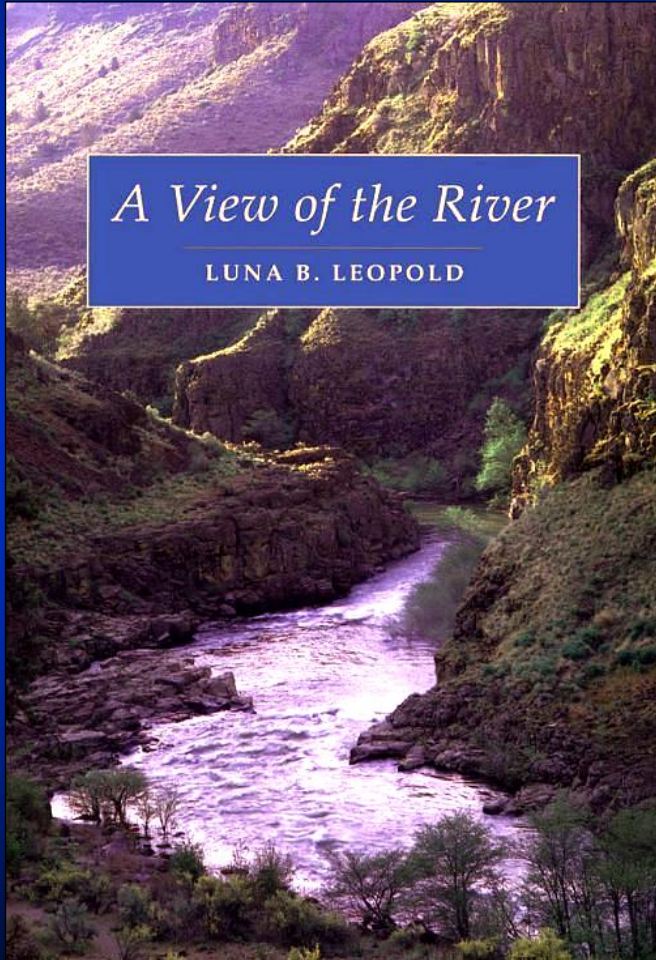
Scott Russell Sanders, *A Conservationist Manifesto* (2009)

A satellite image of the Amazon basin in South America, showing the dense green forest and the intricate network of rivers and tributaries. The image is used as a background for the text.

“The proliferation of public agencies dealing with water has led to a disassociation of their policies, their procedures, and their outlook from the operational health of the hydrologic system. Everything one entity does affects many other entities, yet each entity operates as if it alone is the flower facing the sun. There is no guiding belief, no ethos involving the natural world.... [Resource] management is stressed by a plague of special interests, a disdain for equity, and as a result, the public is the continual loser.”

Luna Leopold, “Ethos, Equity, and the Water resource” (1990)

Luna Leopold



“Water is the most critical resource issue of our lifetime and our children’s lifetime. The health of our waters is the principal measure of how we live on the land.”

